

12/20/99
JC625 U.S. PTO

12-21-99

A

UTILITY PATENT APPLICATION TRANSMITTAL (New Nonprovisional Applications Under 37 CFR § 1.53(b))	Attorney Docket No. <u>MS-137856.1</u>
---	---

TO THE ASSISTANT COMMISSIONER FOR PATENTS:

Transmitted herewith is a patent application identified as follows:
First-named inventor: Bruce A. Leak
Title: "Interactive Television Triggers Having Connected Content/Disconnected Content Attribute"

- (X) Original Patent Application.
- () Continuing Application (prior application not abandoned):
() Continuation () Divisional () Continuation-in-part (CIP)
of prior application No: _____ Filed on: _____
() A statement claiming priority under 35 USC § 120 has been added to the specification.

JC518 U.S. PTO
09/467851
12/20/99

Enclosed are:

- 15 pages of Specification and Title Page
- 5 pages Claims
- 1 page Abstract
- 4 pages of Formal Drawings
- 2 pages Declaration/Power of Attorney (signed)
- 2 pages Assignment
- 1 page Recordation Form Cover Sheet
- 3 page 1449 form citing 13 references
- 13 copies of references cited in 1449 form
- X Transmittal letter (in duplicate)
- X A check for filing fee and recording assignment (\$836.00)
- X Return Receipt Postcard

CLAIMS AS FILED				
FOR	NO. FILED	NO. EXTRA	RATE	FEE
Total Claims	22	2	\$18.00	\$ 36.00
Independent Claims	3	0	\$78.00	\$ 0.00
Multiple Dependent Claims (if applicable)				\$0.00
Assignment Recording Fee				\$40.00
Basic Filing Fee				\$760.00
Total Filing Fee				\$836.00

I hereby certify that this is being deposited with the U.S. Postal Service "Express Mail Post Office to Addressee" service under 37 CFR § 1.10 on the date indicated below and is addressed to:

Assistant Commissioner for Patents
Box Patent Application
Washington, D.C. 20231

By: Arthur J. Behiel
Typed Name: Arthur J. Behiel
Express Mail Label No.: EE711614922US
Date of Deposit: 12/20/99

Respectfully submitted,

By: Arthur J. Behiel
Arthur J. Behiel, Attorney for Applicants
Reg. No. 39,603

Date: 12/20/99

Correspondence Address:

7041 Koll Center Parkway, Suite 280
Pleasanton, California 94566
Phone: (925) 461-2616
Fax: (925) 461-0961

1 PROVIDING MULTIPLE LEVELS OF INTERACTIVE TELEVISION
2 SERVICE USING TRIGGERS AND TRIGGER FILTERS

3 Bruce A. Leak

4 Daniel J. Zigmond

5 Dean J. Blackketter

6
7 BACKGROUND OF THE INVENTION

8 Figure 1 depicts a conventional interactive television
9 system 100, including a broadcast television transmitter 105, a
10 broadcast antenna 110, and a pair of receiver units 115 and
11 120. Receiver units 115 and 120, also referred to as "Internet
12 terminals" or "set-top boxes," allow viewers to interact with
13 network content via bi-directional (i.e., two-way) connections
14 122 and 123, watch broadcast television via a unidirectional
15 (i.e., one-way) broadcast connection between antenna 110 and
16 the receiver units, or simultaneously do both.

17 Receiver units 115 and 120 merge network and broadcast
18 experiences, displaying icons, data, and other information
19 along with broadcast video. Much of the displayed information
20 is interactive, which is to say that the viewer can interact
21 with the information to obtain a personalized experience. For
22 example, an icon broadcast with a TV commercial can provide a
23 link to additional information about an advertised product or
24 service.

25 Broadcasters present viewers with interactive information
26 by broadcasting a "trigger" 126 along with television video
27 130. Trigger 126 may include the interactive information
28 and/or may provide a link to additional information resources.
29 A link to additional information might include the pathname of

1 a local file on receivers 115 and 120 or a Uniform Resource
2 Identifier (URI) for an Internet resource, such as a sponsor's
3 Web site.

4 Web pages and other information resources that require a
5 bi-directional connection to a remote information store are
6 termed "connected content." Locally stored information
7 resources that can be accessed without a bi-directional
8 connection to a remote information store are termed
9 "disconnected content." A locally stored electronic
10 programming guide stored in local memory is an example of
11 disconnected content. Disconnected content may include links
12 to connected content.

13 A trigger identifying connected content typically causes
14 receiver units 115 and 120 to display an icon offering a viewer
15 the option of purchasing an advertised item by selecting the
16 icon and filling out an order form. In the example of Figure
17 1, trigger 126 has caused receiver units 115 and 120 to display
18 an icon 135 that provides a hyperlink to an order form 145 on a
19 remote information store 150. If a viewer selects icon 135
20 using e.g. a handheld remote control unit 140, then the
21 viewer's receiver unit requests and receives order form 145.
22 The viewer can then interact with order form 145 to submit
23 user-specific information back to a merchant's server.

24 A trigger identifying disconnected content may also cause
25 receiver units 115 and 120 to display an icon, but the
26 information associated with the icon will be accessible without
27 a bi-directional connection to remote information stores. For
28 example, such a trigger might refer to an electronic
29 programming guide stored in local memory on receiver units 115
30 and 120. Disconnected content can be delivered to receiver
31 units 115 and 120 in a number of ways; for example, the viewer
32 may load the content into local memory, or the content may be

1 encoded into a broadcast television signal and transmitted to
2 receiver units 115 and 120 for local storage.

3 Vendors who lease or sell receiver units provide their
4 customers access to remote information stores, typically for a
5 fixed monthly fee. These vendors in turn buy bandwidth from
6 network equipment companies that supply the necessary hardware
7 to connect receiver units to remote information stores. In a
8 typical agreement between a receiver-unit vendor and a network
9 equipment company, the costs to the vendor depend upon whether
10 and how long their customers connect to remote information
11 stores. Furthermore, the time during which a customer connects
12 to a remote information store affects the charges accrued by
13 service suppliers, peak-usage periods typically costing more
14 per unit time than do periods of lower activity. Thus, the
15 connection costs incurred by receiver-unit vendors depend upon
16 whether and when their customers connect to remote information
17 stores.

18 Receiver-unit vendors would like to offer different levels
19 of service at different prices, so that customers who connect
20 to remote information stores pay for the additional costs
21 associated with connecting. By making customers who connect to
22 remote information stores pay for connection costs, receiver-
23 unit vendors (and others who support interactive television)
24 can offer a lower level of interactive television service for
25 cost-sensitive customers who do not want to pay to connect to
26 remote information stores.

27 SUMMARY

28 The present invention employs a system of broadcast
29 triggers in which connectivity values identify associated
30 information resources as either "connected content" or
31 "disconnected content." The term "connected content" refers to
32

1 information resources, such as Web pages, that are accessed via
2 bi-directional connections to remote information stores; the
3 term "disconnected content" refers to information resources,
4 such as a locally stored program guide, that do not require
5 such a bi-directional connection.

6 In accordance with an embodiment of the invention,
7 receiver units that are temporarily or permanently incapable of
8 establishing bi-directional connections to remote information
9 stores ("disconnected receivers") can identify and reject
10 triggers that direct the viewer to connected content (i.e.,
11 connected-content triggers) by examining the connectivity
12 values of incoming triggers. Thus, content providers can
13 broadcast connected-content triggers to connected and
14 disconnected receiver units without interrupting disconnected
15 receiver units with triggers they cannot execute. Furthermore,
16 the ability to distinguish between connected-content triggers
17 and disconnected-content triggers allows service providers to
18 offer a lower level of service to those users who do not wish
19 to pay for the ability to establish a bi-directional connection
20 to remote information stores.

21 In accordance with another embodiment of the invention,
22 service suppliers can offer a semi-connected level of service
23 to customers who opt for limited access to remote information
24 stores. For example, such users may agree to be barred access
25 to connected content during peak hours, or for more than a
26 certain number of hours per month.

27 Disconnected receiver units include a trigger filter that
28 can distinguish between disconnected-content triggers and
29 connected-content triggers. Disconnected receiver units filter
30 out connected-content, and so do not interrupt the respective
31 viewers with links to inaccessible content. Filters in
32 receiver units adapted to provide the semi-connected level of

1 service recognize a third type of trigger that can be executed
2 at a later time, allowing customers of this level of service to
3 take advantage of less expensive off-peak rates offered by
4 network equipment companies.

5 Other features of the present invention will be apparent
6 from the accompanying drawings and from the detailed
7 description that follows.

8 9 BRIEF DESCRIPTION OF THE DRAWINGS

10 Figure 1 (Prior Art) is a diagram of an interactive
11 television system 100.

12 Figure 2 is a simplified diagram of a pair of triggers
13 that include connectivity attributes.

14 Figure 3 is a simplified diagram of an interactive
15 television system 300 in accordance with one embodiment of the
16 present invention.

17 Figure 4 is a flowchart depicting methods carried out by
18 system 300 of Figure 3.

19 Figure 5 is a simplified diagram of an interactive
20 television system in accordance with an embodiment of the
21 present invention.

22 23 DETAILED DESCRIPTION

24 The present invention enables vendors who lease or sell
25 receiver units to offer different levels of service to
26 receiver-unit customers. One level of service allows customers
27 to exchange information with remote information stores. For
28 example, this level of service might allow customers to
29 establish dial-up or cable connections to dedicated servers, or
30 to Web servers via the Internet. Broadcasters can send these
31 customers links, in the form of broadcast "triggers," to Web
32 servers that provide the customer with additional information

1 relating to a broadcast program or commercial. Customers can
2 then select such links to access the additional information.
3 Selecting a link establishes a bi-directional connection to the
4 resource indicated by the link. In accordance with one
5 embodiment of the invention, information resources, such as Web
6 pages, that require a bi-directional connection from a receiver
7 unit are termed "connected content."

8 Some customers are either unable or unwilling to access
9 connected content. These customers may be uncomfortable with
10 the idea of exchanging information with remote sites or may
11 simply be unwilling to pay for the requisite connectivity. The
12 present invention supports such customers by allowing receiver-
13 unit vendors to supply "disconnected" receiver units that do
14 not support the ability to access connected content.

15 Disconnected receiver units provide access to interactive
16 information, but this information is limited to information
17 that is transmitted in a broadcast video channel, stored
18 locally in the receiver unit, or both. Such information,
19 termed "disconnected content," typically includes electronic
20 program guides, electronic newspapers, or program reminders.

21 Disconnected receiver units in accordance with the
22 invention include a trigger filter that distinguishes between
23 triggers that direct the viewer or receiver unit to connected
24 content (i.e., connected-content triggers) and triggers that
25 direct the viewer or receiver unit to disconnected content
26 (i.e., disconnected-content triggers). Disconnected receiver
27 units filter out connected-content triggers, and so do not
28 interrupt the respective viewers with links to inaccessible
29 content.

30 Connected- and disconnected-content triggers can be
31 transmitted in the vertical-blanking interval (VBI) of an
32 analog broadcast video signal. The text service channels of

line 21 of the VBI provide a robust communication medium, albeit at relatively low bandwidth. In some embodiments of the invention, triggers are text based, and their syntax follows a basic format that complies with the Electronic Industries Association EIA-746A, "Transport of Internet Uniform Resource Locator (URL) Information Using Text-2 (T-2) Service" (September 1998), which is incorporated herein by reference. EIA-746A defines the formatting necessary to transmit Internet URLs using the vertical-blanking interval of a broadcast television signal, and is incorporated herein by reference. For further details regarding acceptable trigger syntax, see the Advanced Television Enhancement Forum Specification (ATVEF), Versions 1.1 revision 26, (2/2/99), which is incorporated herein by reference.

In one embodiment that complies with EIA-746A, each trigger includes a uniform resource identifier (URI) followed by zero or more fields and an optional checksum. Each field, in turn, includes an attribute/value pair. The following illustrates typical trigger format:

```
<uri> [attr1:val1] [attr2:val2] ... [attrn:valn] [checksum]
```

Figure 2 depicts an exemplary connected-content trigger 200 and an exemplary disconnected-content trigger 230. Trigger 200 includes a URI field 205, a connectivity field 210, an "expires" field 215, and a checksum 220.

In connected content trigger 200, URI field 205 identifies a Web page presenting additional information about a product, service, or event related to a broadcast television program or commercial. The same field 205 in disconnected content trigger 230 identifies a resource local to receiver units configured to receive and understand trigger 230.

Connectivity field 210, identified by a connectivity attribute 222, includes a connectivity value 225 indicating whether URI 205 addresses connected content. In connected-content trigger 200, a connectivity value of "true" indicates that URI 205 addresses connected content; in disconnected-content trigger 230, a connectivity value of "false" indicates that the associated URI 205 addresses disconnected content. Connectivity value 225 may be set to "true" even if URI 205 is directed to disconnected content that includes links to connected content. For example, a connected-content trigger may call up a form in local memory (disconnected content) that, once filled out, requires a connection for submission. Thus, URI 205 is directed to a local resource, but the author of the trigger might nevertheless label set value 225 to "true" to avoid interrupting viewers with a form they cannot use.

The "expires" field 215 is optional, and can be used to provide a time stamp indicating a time at which trigger 200 expires. One embodiment employs the form *yyyymmddThhmmss*, where the capital letter "T" separates the date from the time. The time string may be shortened by reducing the resolution. For example *yyyymmddThhmm* (no seconds specified) is valid, as is *yyyymmdd* (no time specified at all). When no time is specified, the trigger expires at the beginning of the specified day. The "expires" attribute can be abbreviated as the single letter "e" (e.g., [e:19991031] causes trigger 200 to expire on October 31, 1999). The "expires" field 215 ensures that information contained in triggers is timely. Without this attribute, a rebroadcast of a show might provide a "stale" link that is no longer directed to a valid information resource.

Checksum 220 can be appended to the end of trigger 200 to detect data corruption that may occur during receipt or transmission of a trigger. One embodiment employs a two-byte

1 hexadecimal checksum produced by the standard TCP/IP checksum
2 algorithm described in Request For Comments (RFC) 719,
3 "Internet Protocol," September 1981, which is incorporated
4 herein by reference.

5 Figure 3 is a simplified diagram of an interactive
6 television system 300 in accordance with one embodiment of the
7 invention. System 300 includes a broadcast antenna 301
8 broadcasting television video 302 and respective connected-
9 content and disconnected-content triggers 200 and 230. System
10 300 also includes a first television receiver unit 305 and a
11 second television receiver unit 306. Receiver units 305 and
12 306 provide customers access to interactive content using an
13 ordinary TV set 308 as a display and a remote control 309 or
14 wireless keyboard (not shown) for user input. Receiver units
15 305 and 306 include respective trigger filters 307 and 310. As
16 discussed below in detail, trigger filters 307 and 310 can be
17 configured to accept or reject connected-content triggers.

18 Receiver unit 305, a "connected" receiver unit, can
19 establish and maintain a connection 320 to a remote information
20 store 315. Receiver unit 306, a "disconnected" receiver unit,
21 is not configured to connect to remote information store 315.
22 Remote information store 315 is, in one embodiment, a server
23 controlled by a television sponsor, and includes a digital form
24 325 adapted to query prospective buyers who access information
25 store 315 via connection 320. Connection 320 may be any
26 suitable bi-directional connection, including a POTS (plain old
27 telephone service), Integrated Services Digital Network (ISDN),
28 T1, fiber optic link, cable modem, or satellite.

29 In one embodiment, receiver units 305 and 306 are WebTV®
30 set-top Internet Terminals similar to those described in the
31 following documents, but modified to support features of the
32 invention:

- 1 1. U.S. Patent Application Serial Number 09/099,118,
2 entitled "Communicating Logic Addresses Of Resources
3 In A Data Service Channel Of A Video Signal," filed
4 June 17, 1998, by Daniel J. Zigmond, et al.;
- 5 2. U.S. Patent Application Serial Number 09/295,746,
6 entitled "Enabling and/or Disabling Selected Types Of
7 Broadcast Triggers," filed April 20, 1999, by Timothy
8 F. Park, et al.; and
- 9 3. U.S. Patent Application Serial Number 09/295,436,
10 entitled "Receiving An Information Resource From The
11 Internet If It Is Not Received From A Broadcast
12 Channel," filed April 20, 1999, by Daniel J.
13 Zigmond, et al.

14 The content of these documents is incorporated herein by
15 reference. Receiver units 305 and 306 may be other types of
16 receiver units, such as a personal computer having a television
17 tuner card such as the "Windows® 98 Broadcast PC" system.

18 Figure 4 is a flowchart 400 illustrating receiver methods
19 of receiver units 305 and 306. Each of receiver units 305 and
20 306 receives connected-content trigger 200 of Figure 2 (steps
21 405 and 407). Connected receiver unit 305 subjects trigger 200
22 to filter 307, which is configured to accept connected-content
23 triggers. Thus, filter 307 forwards connected-content trigger
24 200 for execution in step 410. In the example of Figure 3,
25 executing trigger 200 causes an icon (not shown) to be
26 displayed on display 308 of receiver unit 305. If the viewer
27 selects the icon using e.g. handheld remote control unit 309,
28 then receiver unit 305 retrieves form 325 from remote
29 information store 315 and presents form 325 to the viewer. The
30 viewer may then use form 325 to provide personalized
31 information to the entity that maintains information store 315.
32 In a typical example, a viewer fills in form 325 to request

1 additional information about a product or service presented to
2 the viewer during a television advertisement.

3 Returning to Figure 4, disconnected receiver unit 306
4 subjects trigger 200 to filter 310, which is configured to
5 reject connected-content triggers. That is, filter 310 checks
6 connectivity value 225 of connectivity field 210 (both of
7 Figure 2) and determines that value 225 is "true," indicating
8 that trigger 200 is associated with connected content. Filter
9 310 therefore rejects trigger 200 in a decision depicted as
10 step 415. In rejecting trigger 200, receiver unit 306 simply
11 ignores trigger 200 (step 420) and awaits a subsequent trigger.

12 Next, receiver 305 and 306 receive disconnected-content
13 trigger 230, in which connectivity value 225 is "false." This
14 value indicates that trigger 230 is associated with content
15 that is to be made available disconnected receiver units.
16 Thus, filter 310 passes trigger 230 (step 415). Disconnected
17 receiver unit 306 then executes trigger 230 (step 425), which
18 is to say that receiver unit 306 carries out some instruction
19 expressed by trigger 230. For example, receiver unit 306 might
20 display an icon presenting a link a program guide, or some
21 other local resource. Filter 307 also passes disconnected-
22 content triggers, so connected receiver unit 305 also executes
23 disconnected-content trigger 230.

24 For a more detailed treatment of triggers and trigger
25 filters, see co-pending application serial number 09/295746
26 entitled "Enabling and/or Disabling Selected Types of Broadcast
27 Triggers," by Timothy F. Park, Dean J. Blackketter, and Sandra
28 R. Bernardi, the contents of which is incorporated herein.

29 Vendors of receiver units typically provide customers
30 access to remote information stores for a fixed monthly fee.
31 Vendors, in turn, buy bandwidth from network equipment
32 companies that supply the necessary hardware to connect

1 receiver units to remote information stores. In a typical
2 agreement between a vendor and a network equipment company, the
3 costs to the vendor depend upon the time during which customers
4 connect, peak-usage periods typically costing more per unit
5 time than periods of lower activity. Thus, the connection
6 costs incurred by vendors depend upon whether and when their
7 customers connect to remote information stores.

8 One embodiment of the invention allows vendors to offer
9 receiver-unit customers a level of service that allows access
10 to connected content only during specified times, such as
11 during periods of relatively low activity. In accordance with
12 this embodiment, some receiver units are configured to ignore
13 connected-content triggers during specified time periods, or to
14 store connected-content triggers for execution at a later time.
15 For example, a viewer might execute a link to connected content
16 that provides additional information about an advertised
17 product or service. The viewer's receiver unit might then
18 store the link for execution at a later time.

19 Figure 5 is a simplified diagram of an interactive
20 television system 500 in accordance with an embodiment of the
21 invention that allows vendors to offer receiver-unit customers
22 what might be called a "semi-connected" level of service.
23 System 500 includes many of the components discussed above in
24 connection with Figure 3, like-numbered elements being similar.
25 System 500 additionally includes a semi-connected receiver unit
26 505 that acts as a connected-content receiver at times
27 determined by connectivity information stored in a local memory
28 508. During those times, receiver unit 505 can establish or
29 maintain a bi-directional connection 510 to remote information
30 store 315. At other times, receiver unit 505 acts like
31 disconnected receiver unit 306 of Figures 4 and 5. Thus, the
32 configuration data in local memory 508 allows receiver unit 505

1 to access connected content only during proscribed periods.
2 Alternatively, receiver unit 505 might filter out connected-
3 content triggers during proscribed periods and nevertheless
4 allow the viewer to access connected content, as desired,
5 during those periods.

6 Some types of connected content may not make sense if
7 retrieved later. For example, an enhancement to a broadcast
8 television show may be "stale" if presented during a subsequent
9 program. Other types of connected content are better suited
10 for delayed execution. For example, a television commercial
11 may offer a connected-content link to additional information
12 about an advertised product, such as the current price.
13 Selecting the link may prompt the sponsor to send the viewer
14 additional information via e-mail, conventional mail, or
15 telephone. In such a case, the viewer need not establish a
16 connection right away to obtain the desired response from the
17 sponsor. It might therefore make sense accept viewer requests
18 and send them in later when a connection is established.

19 Figure 6 depicts a trigger 600 in accordance with an
20 embodiment of the invention that supports connectivity
21 attributes that identify triggers that may be executed at a
22 later time. Trigger 600 is similar to triggers 200 and 230 of
23 Figure 2, like-numbered features being the same. Trigger 600
24 is different, however, in that connectivity value 225 is set to
25 "later," indicating that trigger 600 refers to connected
26 content that is suitable for future access.

27 Trigger 600 can be executed immediately by connected
28 receiver units, but can also be executed later by semi-
29 connected receiver units. For example, a semi-connected
30 receiver unit may store trigger 600, or some portion thereof,
31 for later execution. The semi-connected receiver unit then
32 executes each trigger in local memory when a connection is

1 established at some later time. The later time might be a time
2 of day, the end of a random or specified period from receipt of
3 the trigger, or the next time the viewer initiates a
4 connection.

5 Receiver units 305, 306, and 505 may be hard-wired to
6 function as connected, disconnected, or semi-connected receiver
7 units. Alternatively, their respective functionality can be
8 defined by configuration data stored in local memory (e.g.,
9 memory 508). This alternative allows vendors to preset and/or
10 remotely modify receiver units to establish a desired level of
11 service. In other embodiments, the customer can select between
12 connected, disconnected, and semi-connected receiver
13 configurations. The customer may therefore decide whether he
14 or she wishes to be notified of connected content. Local
15 memory can be any physical medium that stores configuration
16 data associated with the level of connectivity, including a
17 RAM, hard and floppy disks, CD-ROM, DVD, and flash ROM.

18 Connectivity field 210 (Figures 2 and 6) can support
19 additional connectivity values. For example, the presence of
20 field 210 can indicate that the associated trigger refers to
21 connected content, and the absence of field 210 can indicate
22 that a trigger refers to disconnected content. In other
23 embodiments, connectivity value 225 can be can be assigned a
24 variable indicating the likelihood that the associated trigger
25 will require access to connected content. Such variable can be
26 numbers that range from zero (zero percent likelihood of
27 involving a connection to a remote information store) to one
28 hundred (a one hundred percent likelihood of involving a
29 connection to a remote information store). Receiver units can
30 then determine whether to execute a given trigger based on the
31 likelihood that the trigger involves a connection. This
32 embodiment may be used when a trigger identifies a number of

1 resources, only some of which are directed to connected
2 content.

3 In another embodiment, disconnected receiver units reject
4 triggers to connected content not by ignoring them, but instead
5 provide the viewer with an indication that a displayed link
6 cannot be executed. Disconnected receiver units may, for
7 example, provide a message indicating that selecting a
8 displayed icon will have no effect.

9 In yet another embodiment, connected content and
10 disconnected content are defined as set forth in the U.S.
11 patent application Serial No. 09/345,247, entitled "Interactive
12 Television Triggers Having Connected Content/Disconnected
13 Content Attribute," by Leak et al., which is incorporated
14 herein by reference.

15 Although the present invention is described in connection
16 with certain specific embodiments for instructional purposes,
17 the present invention is not limited thereto. Accordingly,
18 various modifications, adaptations, and combinations of various
19 features of the described embodiments can be practiced without
20 departing from the scope of the invention as set forth in the
21 claims.

1 CLAIMS

2 What is claimed is:

3 1. A method comprising:

- 4 a. receiving a connected-content trigger on a first
5 receiver unit and a second receiver unit, the
6 connected-content trigger having a first value
7 indicating that first content associated with the
8 connected-content trigger is connected content, the
9 first receiver unit including a trigger filter;
- 10 b. rejecting the connected-content trigger with the
11 trigger filter such that the first receiver unit
12 ignores the connected-content trigger;
- 13 c. executing the connected-content trigger on the second
14 receiver unit;
- 15 d. receiving a disconnected-content trigger on the first
16 and second receiver units, the disconnected-content
17 trigger having a second value indicating that second
18 content associated with the disconnected-content
19 trigger is disconnected content;
- 20 e. accepting the disconnected-content trigger with the
21 trigger filter; and
- 22 f. executing the disconnected-content trigger on the
23 first and second receiver units.

24

25 2. The method of claim 1, wherein disconnected content is
26 content that does not require a bi-directional connection
27 to a remote information store.

28

29 3. The method in claim 1, wherein executing a connected-
30 content trigger comprises at least one of establishing and
31 maintaining a bi-directional connection to a remote
32 information store.

- 1
- 2 4. The method in claim 1, wherein rejecting a trigger
- 3 comprises preventing a display of information associated
- 4 with the trigger.
- 5
- 6 5. The method of claim 1, wherein rejecting the connected-
- 7 content trigger comprises storing at least a portion of
- 8 the connected-content trigger.
- 9
- 10 6. The method of claim 1, further comprising storing the
- 11 disconnected content in a first and second local memory on
- 12 the respective first and second receiver units.
- 13
- 14 7. The method of claim 6, wherein the storing occurs before
- 15 (b) .
- 16
- 17 8. The method of claim 6, wherein the disconnected content
- 18 comprises a plurality of linked web pages.
- 19
- 20 9. The method of claim 8, further comprising displaying a
- 21 first one of the web pages and then displaying a second
- 22 one of the web pages without establishing a bi-directional
- 23 connection to a remote information store.
- 24
- 25 10. The method of claim 8, further comprising displaying a
- 26 first one of the web pages and then displaying a plurality
- 27 of the web pages without establishing a network
- 28 connection.
- 29
- 30 11. The method of claim 1, further comprising:

- g. storing first configuration data in the first receiver unit before (b), the first configuration data defining a disconnected configuration;
- h. storing second configuration data in the first receiver unit defining a connected configuration; and
- i. having stored the second configuration data, receiving and executing a second connected content trigger that includes a third value indicating that third content associated with the second connected content-trigger is connected content.

12. The method of claim 1, wherein rejecting the connected-content trigger includes storing at least a portion of the connected-content trigger for execution at a later time.

13. The method of claim 12, wherein the later time is a specified time of day.

14. The method of claim 12, wherein the later time is an end of a delay period beginning upon receipt of the connected-content trigger.

15. A receiver unit comprising:

- a. configuration data stored in a local memory; and
- b. means for distinguishing disconnected-content triggers from connected-content triggers, and for executing the disconnected-content triggers without executing the connected-content triggers.

16. The receiver unit of claim 15, further comprising means for modifying the configuration data of the receiver unit.

1 17. The receiver unit in claim 15, wherein the disconnected-
2 content trigger includes a first connectivity value,
3 wherein the connected-content trigger includes a second
4 connectivity value, and wherein the means for
5 distinguishing disconnected-content triggers from
6 connected-content triggers distinguishes triggers uses the
7 first and second values.

8
9 18. A system comprising:

- 10 a. a transmitter transmitting video, a connected-content
11 trigger, and a disconnected-content trigger;
12 b. a disconnected receiver unit that receives the
13 connected-content trigger and the disconnected-
14 content trigger and executes the disconnected-content
15 trigger and rejects the connected-content trigger,
16 the disconnected receiver unit having a first
17 unidirectional connection to the transmitter; and
18 c. a connected receiver unit that receives and executes
19 both the connected-content trigger and the
20 disconnected-content trigger, the second receiver
21 unit having a bi-directional connection to a remote
22 information store and a second unidirectional
23 connection to the transmitter.

24
25 19. The system of claim 18, further comprising a third
26 receiver unit that receives the connected-content trigger
27 and executes the connected-content trigger at a specified
28 time, the third receiver having a bi-directional
29 connection to a remote information store at a later time
30 and a third unidirectional connection to the transmitter.

1 20. The system of claim 18, further comprising a third
2 receiver unit adapted to receive the connected-content
3 trigger and stores at least a portion of the connected-
4 content trigger for execution at a later time.

5
6 21. The system of claim 20, wherein the later time is a
7 specified time of day.

8
9 22. The system of claim 20, wherein the later time is an end
10 of a delay period beginning upon receipt of the connected-
11 content trigger.

ABSTRACT OF THE DISCLOSURE

An interactive television system includes "connected" receiver units capable of establishing bi-directional connections to remote information stores, such as Web servers, and "disconnected" receiver units unequipped to make such connections. The system supports the use of broadcast triggers that include connectivity values indicating whether an information resource identified by a trigger refers to "connected content" or "disconnected content." The term "connected content" refers to information resources that require bi-directional connections to remote information stores; the term "disconnected content" refers to information resources, such as a locally stored program guide, that do not require such bi-directional connections. Disconnected receiver units identify and reject connected-content triggers by examining connectivity values broadcast as part of triggers. Thus, content providers can broadcast connected-content triggers to connected and disconnected receiver units without interrupting disconnected receiver units with links to inaccessible content. Furthermore, the ability to distinguish between connected and disconnected content allows vendors who sell or lease receiver units to offer a lower level of service to those customers who do not wish to pay for the ability to access connected content.

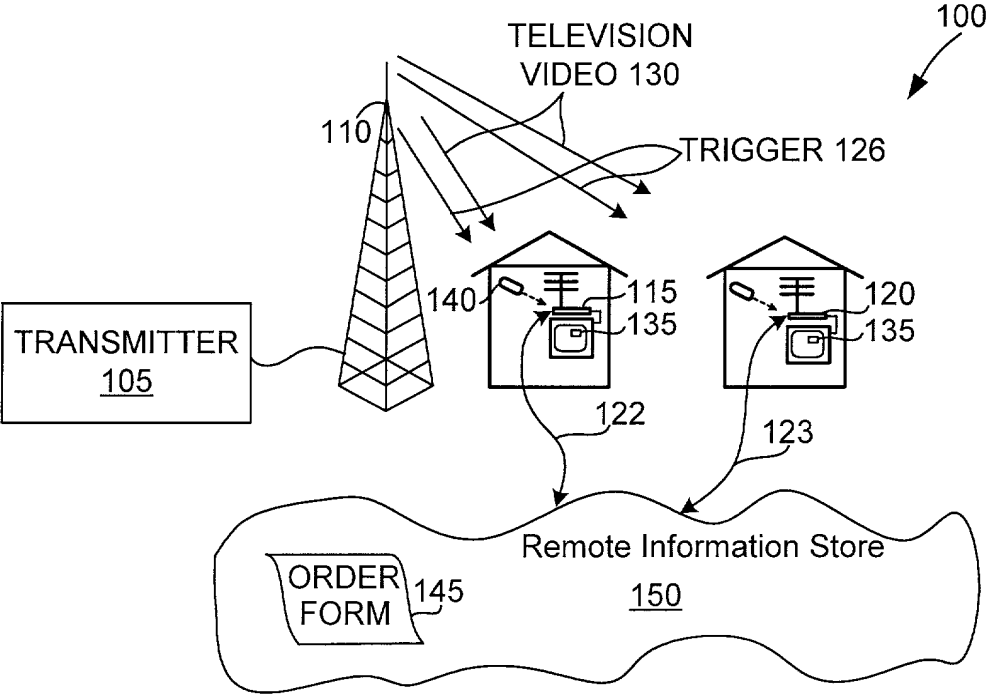
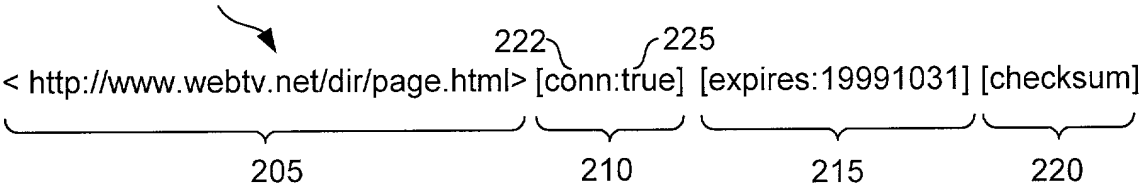


FIG. 1
(Prior Art)

CONNECTED-CONTENT TRIGGER 200



DISCONNECTED-CONTENT TRIGGER 230

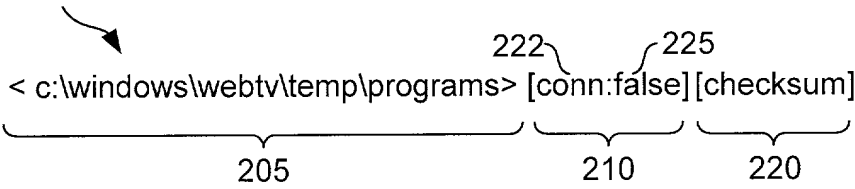


FIG. 2

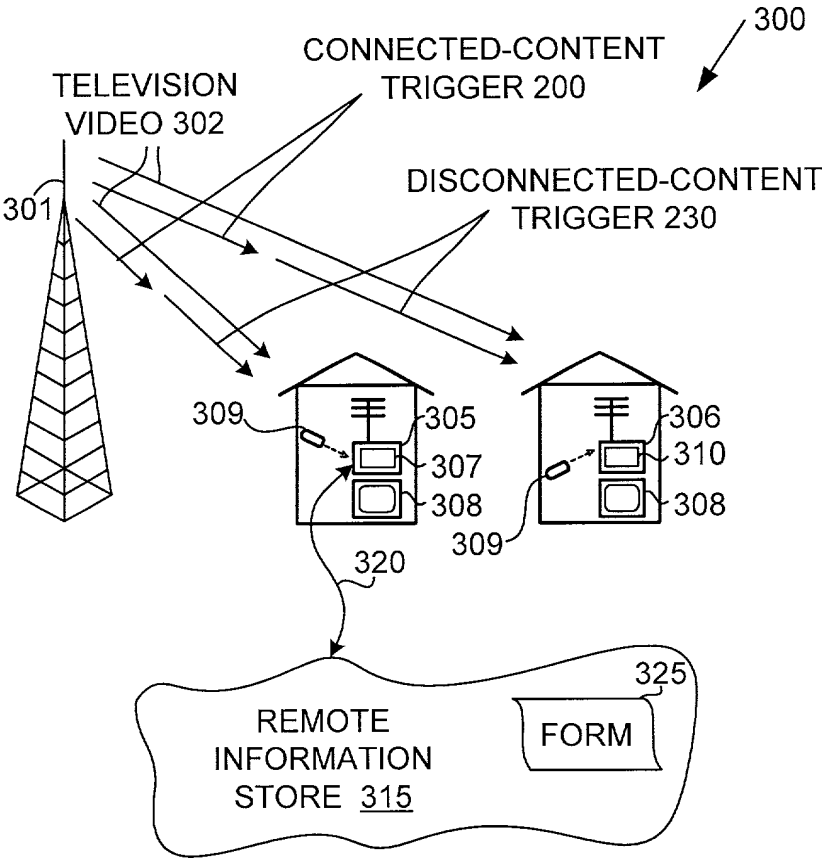


FIG. 3

3/4

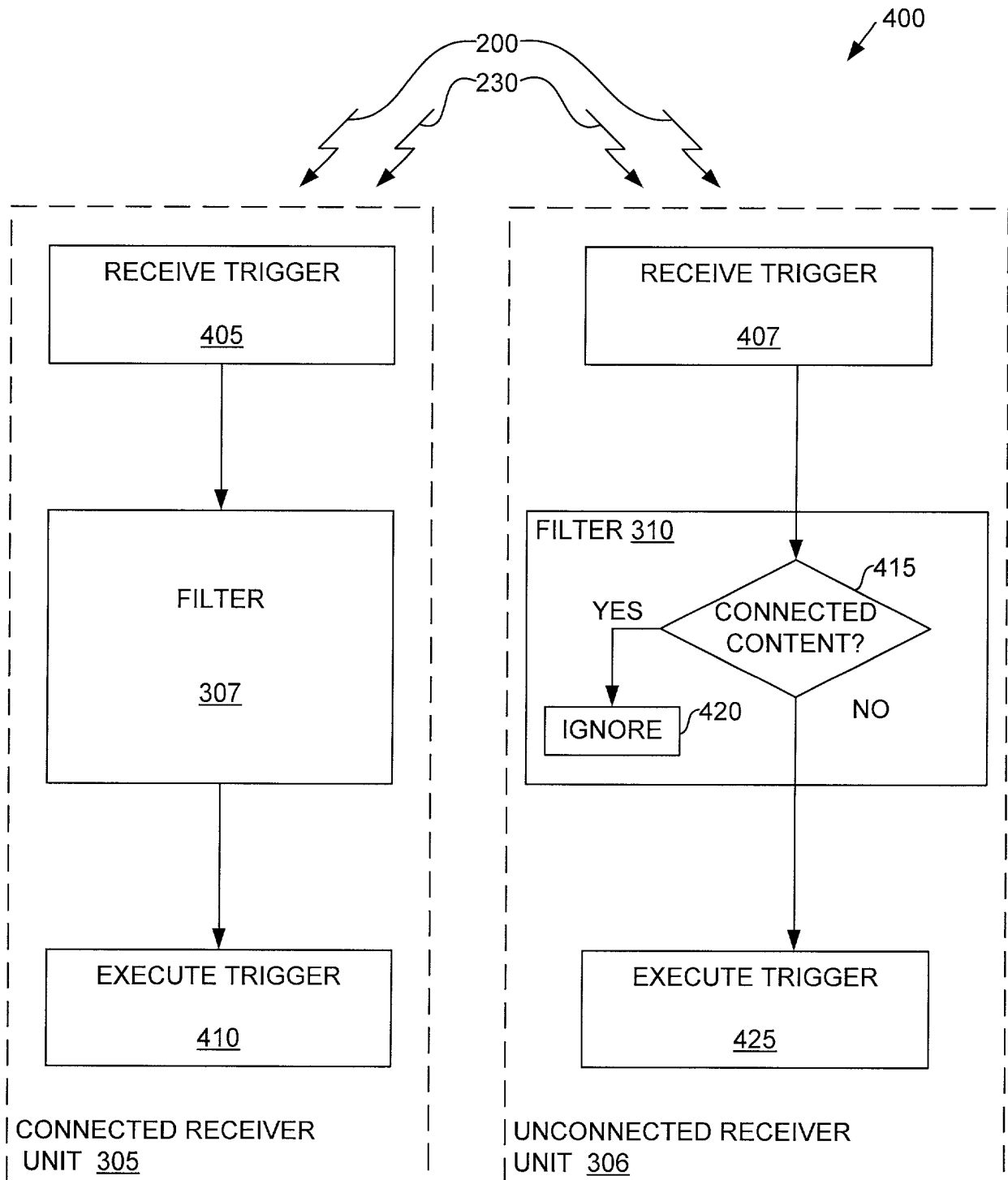


FIG. 4

4/4

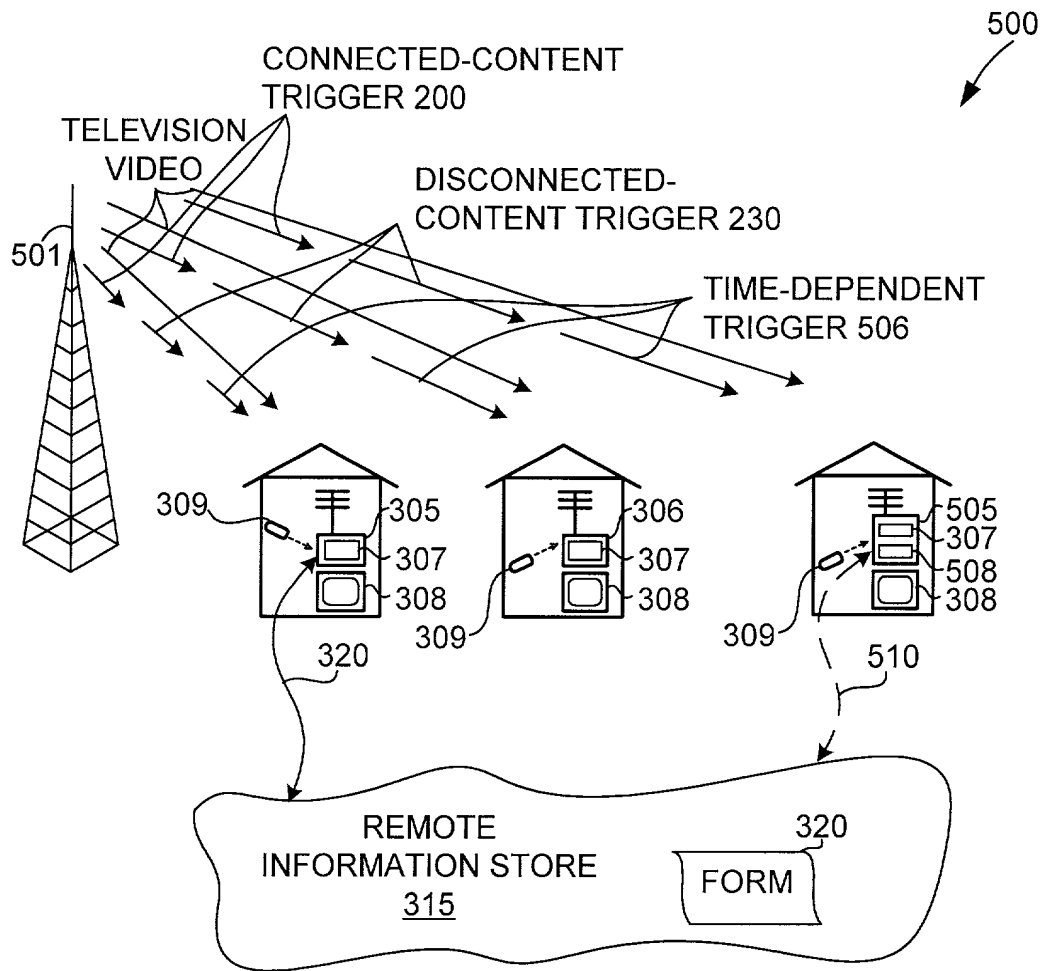


FIG. 5

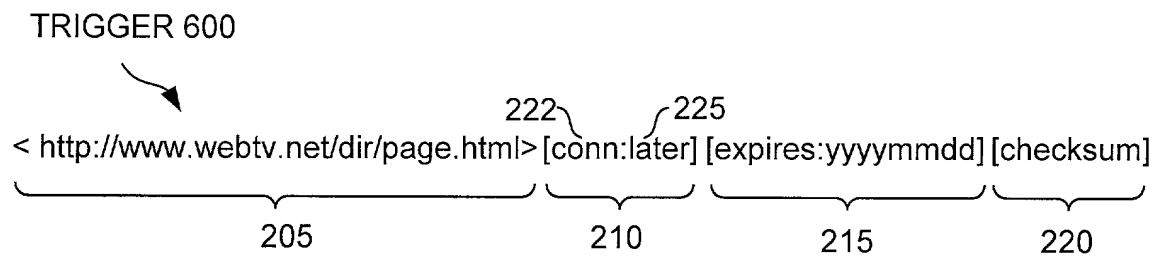


FIG. 6

DECLARATION AND POWER OF ATTORNEY FOR PATENT APPLICATION

As a below named inventor, I hereby declare that:

My residence, post-office address, and citizenship are as stated below next to my name. I believe I am the original, first and sole inventor (if only one name is listed below), or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought by way of the application entitled:

"PROVIDING MULTIPLE LEVELS OF INTERACTIVE TELEVISION SERVICE USING TRIGGERS AND TRIGGER FILTERS"

which (check) ☒ is attached hereto.
☐ and is amended by the Preliminary Amendment attached hereto.
☐ was filed on _____, as Application Serial No. _____.
☐ and was amended on _____ (if applicable).

I hereby state that I have reviewed and understood the contents of the above-identified specification, including the claims, as amended by any amendment referred to above. I acknowledge the duty to disclose all information which is material to patentability as defined in 37 CFR 1.56.

Foreign Application(s) and/or Claim of Foreign Priority

I hereby claim foreign priority benefits under Title 35, United States Code Section 119(a)-(d), of any foreign application(s) for patent or inventor's certificate, or any PCT international application(s) designating at least one country other than the United States of America listed below, and have also identified below any foreign application(s) for patent or inventor's certificate or an PCT international application(s) designating at least one country other than the United States of America filed by me on the same subject matter having a filing date before that of the application(s) on which priority is claimed:

APPLICATION NUMBER	COUNTRY	DAY/MONTH/YEAR FILED	PRIORITY CLAIMED UNDER 35 U.S.C. 119
N/A			YES ____ NO ____
			YES ____ NO ____

Provisional Application

I hereby claim the benefit under Title 35, United States Code Section 119(e) of any United States provisional application(s) listed below:

APPLICATION SERIAL NUMBER	FILING DATE
N/A	

U.S. Priority Claim

I hereby claim the benefit under Title 35, United States Code, Section 120 of any United States application(s) or PCT international application(s) designating the United States of America listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application(s) in the manner provided by the first paragraph of Title 35, United States Code Section 112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, Section 1.56(a) which became available between the filing date of the prior application(s) and the national or PCT international filing date of this application:

APPLICATION SERIAL NUMBER	FILING DATE	STATUS (patented/pending/abandoned)
N/A		

POWER OF ATTORNEY:

As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) listed below to prosecute this application and transact all business in the Patent and Trademark Office connected therewith.

Arthur J. Behiel, Reg. No. 39,603
Katie E. Sako, Reg. No. 32,628

Daniel D. Crouse, Reg. No. 32,022
T. Lester Wallace, Reg. No. 34,748

Send Correspondence to:

Direct Telephone Calls To:

Arthur J. Behiel, Patent Attorney
 7041 Koll Center Parkway, Suite 280
 Pleasanton, California 94566

Arthur J. Behiel
 Tel: (925) 426-8847
 Fax: (925) 461-0961

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full Name of Inventor: Bruce A. Leak

Citizenship: US

Residence: 4201 Page Mill Road
 Los Altos, CA 94022

Post Office Address: Same as above


 Inventor's Signature

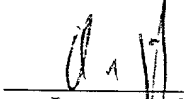
12/2/33
 Date

Full Name of Inventor: Daniel J. Zigmond

Citizenship: US

Residence: 5020 Tolt River Road
 Carnation, WA 98014

Post Office Address: Same as above


 Inventor's Signature


11/16/99
 Date

Full Name of Inventor: Dean J. Blackketter

Citizenship: US

Residence: 106 Saturn Street
 San Francisco, CA 94114

Post Office Address: Same as above


 Inventor's Signature

12-8-99
 Date